

REMARKS

Applicants thank the Examiner for the very thorough consideration given the present application.

Claims 1-12, 14-24 and 26-28 are now present in this application. Claims 1, 8, 17, 26, 27 and 28 are independent.

Reconsideration of this application is respectfully requested.

Rejections under 35 U.S.C. §103

Claims 1-12, 14-24 and 26-28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,337,520 to Jeong et al. (hereinafter, "Jeong") in view of U.S. Patent 6,433,842 to Kaneko et al. (hereinafter, "Kaneko") and further in view of U.S. Patent 5,811,836 to Ha. This rejection is respectfully traversed.

A complete discussion of the Examiner's rejection is set forth in the Office Action, and is not being repeated here.

In rejecting claims under 35 USC 103, it is incumbent on the Examiner to establish a factual basis to support the legal conclusion of obviousness. See, In re Fine, 837 F.2d 1071, 1073, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). In so doing, the examiner is expected to make the factual determinations set forth in Graham v. John Deere Co., 383 U.S. 1, 17, 148 USPQ 459, 467 (1966), and to provide a reason why one of ordinary skill in the pertinent art would

have been led to modify the prior art or to combine prior art references to arrive at the claimed invention. Such reason must stem from some teaching, suggestion or implication in the prior art as a whole or knowledge generally available to one having ordinary skill in the art. Uniroyal Inc. v. F-Wiley Corp., 837 F.2d 1044, 1051, 5 USPQ2d 1434, 1438 (Fed. Cir. 1988), cert. denied, 488 U.S. 825 (1988); Ashland Oil, Inc. v. Delta Resins & Refractories, Inc., 776 F.2d 281, 293, 227 USPQ 657, 664 (Fed. Cir. 1985), cert. denied, 475 U.S. 1017 (1986); ACS Hospital Systems, Inc. v. Montefiore Hospital, 732 F.2d 1572, 1577, 221 USPQ 929, 933 (Fed. Cir. 1984). These showings by the Examiner are an essential part of complying with the burden of presenting a *prima facie* case of obviousness. Note, In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992). The mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the desirability of the modification. In re Fritch, 972 F.2d 1260, 1266, 23 USPQ2d 1780, 1783-84 (Fed. Cir. 1992). To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be suggested or taught by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1970). All words in a claim must be considered in judging the patentability of that claim against the prior art. In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

A suggestion, teaching, or motivation to combine the prior art references is an "essential evidentiary component of an obviousness holding." C.R. Bard, Inc. v. M3 Sys. Inc., 157 F.3d 1340, 1352, 48 USPQ2d 1225, 1232(Fed. Cir. 1998). This showing must be clear and particular, and broad conclusory statements about the teaching of multiple references, standing alone, are not "evidence." See In re Dembiczak, 175 F.3d 994 at 1000, 50 USPQ2d 1614 at 1617 (Fed. Cir. 1999).

The Office Action admits that Jeong does not disclose a pixel electrode made of an amorphous transparent conductive film or a polycrystalline transparent conductive film for preventing a generation of a galvanic effect.

In an attempt to overcome these deficiencies in Jeong, the Office Action turns to Kaneko and Ha.

Kameko, in col. 5, lines 34-65, discloses that, in the case where a layered structure is used for drain lines, a third conductive layer may be formed under the aluminum layer to secure contact with the underlying semiconductor layer, and, in that case, amorphous indium tin oxide (a-ITO) or indium zinc oxide (IZO) that allows for use of a weak-acid etchant is preferably used as the material of the pixel electrodes so that the aluminum alloy is prevented from being damaged during etching of the pixel electrodes."

Applicants respectfully submit that this teaching of Kaneko is not relevant to, nor is obvious to apply to, Jeong because this teaching of Kaneko is

limited to situations in which a third conductive layer is formed under an aluminum layer to secure contact with the underlying semiconductor layer. This type of situation is not present in Jeong. In this regard, reference is made to Fig. 10 of Jeong, in which the underlying semiconductor layer 520 is directly connected to drain electrode 620, and pixel electrode 800 is directly connected to drain electrode 620. In other words, the Kaneko situation is not the same as the Jeong situation. Under such circumstances, the Office Action has not made out a *prima facie* showing that a skilled worker would be properly motivated to modify Jeong to provide amorphous ITO as the pixel electrode.

The Office Action also turns to Ha, which discloses a thin film transistor having a protective layer for a pixel electrode.

Ha discloses forming a passivation layer that acts as a metal etching stop. In particular, Ha discloses first integrally forming a drain/pixel electrode 45 at one time; second, forming a protective passivation layer 46 on the integrally formed drain/pixel electrode and, third, patterning the source electrode. See, for example, col. 5, lines 60 to col. 6, line 2, and Figs. 4A-4H. In Ha, the protective passivation layer 46 prevents the transparent conductive layer forming the drain/pixel electrode 45 from being damaged while using an etchant for patterning the source electrode 47.

The process disclosed by Ha is significantly different than the process used for making the device of Jeong, the primary reference. In Jeong, there is

no integrally formed drain/pixel electrode (as there is in Ha). In Jeong, the source electrode 610 and drain electrode 620 appear to be formed at the same time – see col. 7, lines 19-27 of Jeong (as contrasted with the simultaneous forming of integral drain/pixel electrode 45 in Ha). Additionally, The pixel electrode 800 is formed separately after the separate drain electrode has been formed. In this regard, see col. 7, lines 39-51, which states that “[F]inally, a pixel electrode 800 made of ITO (indium Tin Oxide) and connected to the drain electrode 602 through the contact hole 710 is formed on the passivation layer 700” (as contrasted with the integral, single piece drain/pixel electrode 45 in Ha).

Furthermore, Ha discloses providing a passivation layer on the integral, single piece drain/pixel electrode 45 to keep from causing galvanic contact when the subsequently formed source electrode 47 is etched. This process and overall situation does not exist in Jeong.

Accordingly, it would not be obvious to modify Jeong in view of Ha, because these two references are fundamentally different. Moreover, Ha discloses using a passivation layer to act as a metal etchant stop – see col. 2, lines 38-42, and this has not been shown to provide incentive to modify Jeong to use, for example, amorphous or polycrystalline ITO as the pixel electrode material in Jeong.

Reconsideration and withdrawal of this rejection of claims 1, 8, 17 and 26-28 is respectfully requested.

Claims 2-7, 9-12, 14-16 and 18-24 stand rejected under 35 USC §103(a) as unpatentable over Jeong, Kaneko and Ha, applied as in the rejection of claims 1, 8, 17 and 26-28, and further in view of U.S. Patent 5,135,581 to Tran. This rejection is respectfully traversed.

Initially, Applicants respectfully submit that even if it were proper to modify the Jeong-Kaneko-Ha reference combination as suggested in view of Tran (which is not the case) that the resulting modified reference combination would not meet or render obvious the claimed invention, at least for the reasons presented in the above traversal of the rejection of claims 1, 8, 17 and 26-28.

Furthermore, the alleged motivation to modify the improper base reference combination in view of Tran is given as “reducing visible light absorption and achieving more stable characteristics.” Unfortunately, the Office Action fails to provide objective evidence in the applied prior art of a need, or the knowledge of a need to “have reduced visible light absorption or more stable characteristics” in the claimed invention.

Thus, this reason is based completely on improper hindsight reconstruction of the claimed invention based solely on Applicants’ disclosure.

Moreover, “reducing visible light absorption and achieving more stable characteristics” is nothing more than a broad conclusory statement about the teaching of multiple references, and, standing alone, is not “evidence” of proper motivation to the base reference combination (which itself is improper). See In re Dembiczak, cited above.

Accordingly, Applicants respectfully submit that this rejection of claims 2-5, 9-12 and 18-22 is improper and should be withdrawn.

The Office Action rejects claims 6-7, 14-16 and 23-24 under 35 USC §103(a) as unpatentable over Jeong, Kaneko and Ha, as applied above, and further in view of U.S. Published Patent Application No. 2001/0029054 to Maeda et al. (hereinafter, “Maeda”). This rejection is respectfully traversed.

This rejection is improper at least for the reasons that the rejection of claims 1, 8 and 17, from which claims 6-7, 14-16 and 23-24 respectively depend, are improper, as discussed above.

With respect to claim 14, which is separately treated on page 7 of the Office Action, Applicants respectfully submit that claim 14 depends from claim 8 and is patentable at least for the reasons presented above regarding traversal of the rejection of claim 1.

The alleged motivation to modify the base reference combination in view of Maeda is that Maeda teaches film thicknesses of amorphous transparent ITO pixel electrodes of from 50 to 200 nm (from 500 to 2000 Angstroms).

However, that thickness is taught to prevent coloring - see paragraph [0100], a problem not shown to exist in the base reference combination to which Maeda is applied in this rejection.

Accordingly, this rejection is based on improper hindsight reconstruction of Applicants' invention based solely in Applicants' disclosure.

Thus, reconsideration and withdrawal of this rejection of claims 6-7, 14-16 and 23-24 are respectfully requested.

Additional Cited References

Because the remaining references cited by the Examiner have not been utilized to reject the claims, but have merely been cited to show the state of the art, no comment need be made with respect thereto.

Conclusion

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. It is believed that a full and complete response has been made to the

outstanding Office Action, and as such, the present application is in condition for allowance.

If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone Robert J. Webster, Registration No. 46,472, at (703) 205-8000, in the Washington, D.C. area.

Prompt and favorable consideration of this Amendment is respectfully requested.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

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